What is claimed is:

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- 1. An apparatus for projection display, the apparatus comprising:
 2 an image generation device configured to generate an image;
 3 a wide angle lens system having an optical axis configured to receive the
 4 image and project the image along an optical path for display above the apparatus; and
 5 direction changing optics configured to fold the optical path such that the
 6 optical path changes direction from a first direction to a second direction, the image
 7 generation device is positioned below the optical axis of the wide angle lens system.
 - 2. The apparatus of claim 1, wherein the wide angle lens system includes a relay lens stage and a wide angle lens stage.
 - 3. The apparatus of claim 2, wherein the relay lens stage is configured to generate a distorted intermediate image and the wide angle lens stage is configured to substantially cancel the distortion of the intermediate image.
- 1 4. The apparatus of claim 2, wherein the optical axis of the wide angle lens 2 system is the optical axis of the relay lens stage.
- 5. The apparatus of claim 1, wherein the first direction is substantially the reverse of the second direction.

6. 1 The apparatus of claim 1, wherein the first direction is toward a front of the 2 projection display device and the second direction is toward a rear of the projection 3 display device. 7. 1 The apparatus of claim 1, wherein the direction changing optics include 2 two fold mirrors. 1 8. The apparatus of claim 2, wherein the wide angle lens stage is in a first 2 plane and the relay lens stage is in a second plane, and the first plane is above the 3 second plane. 1 9. A lens system, the system comprising: 2 a relay lens stage configured to generate an intermediate image; 3 a wide angle lens stage configured to substantially correct the intermediate 4 image; and 5 direction changing optics configured to receive the intermediate image from the

1 10. The lens system of claim 9, wherein the direction changing optics 2 comprise at least one fold mirror.

relay lens stage from a first direction and redirect the intermediate image to the wide

angle lens stage in a second direction, where the first direction is substantially opposite

the second direction.

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- 1 11. The lens system of claim 9, wherein the relays lens stage is configured to 2 generate a substantially distorted image and the wide angle lens stage is configured to 3 substantially cancel the distortion of the intermediate image.
- 1 12. The lens system of claim 9, wherein the relay lens stage has a first optical axis and the wide angle lens stage has a second optical axis and where the first optical axis is oriented below the second optical axis.
- 1 13. A projection device comprising the lens system of claim 9.
- 1 14. The projection device of claim 13, comprising a body having a front and a 2 rear, wherein the first direction is toward the front of the body and the second direction 3 is toward the rear of the body.
- 1 15. The projection device of claim 14, wherein the body is substantially sized 2 such that upon positioning the body substantially adjacent a viewing surface a minimum 3 throw distance of the lens system is achieved to the viewing surface.

1 16. A projection device comprising: 2 a means for generating a distorted image; 3 a means for substantially canceling the distortion of the image to generate 4 a corrected image; 5 a means for directing the distorted image in a first direction toward a front 6 of the projection device; and 7 a means for directing the corrected image in a second direction toward a rear of the projection device for projection on a viewing surface above the projection 8 9 device. 1 17. The projection device of claim 16, wherein the means for generating a 2 distorted image includes an image generation device. 1 18. The projection device of claim 16, wherein the means for generating a 2 distorted image includes a relay lens stage. 1 19. The projection device of claim 16, wherein the means for substantially 2 canceling the distortion include a wide angle lens stage. 20. 1 The projection device of claim 16, wherein the means for generating an 2 image is disposed below an optical axis of a means for substantially canceling the 3 distortion of the image to generate a corrected image.